

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DIVISION OF OCCUPATIONAL SAFETY
OCCUPATIONAL HYGIENE / INDOOR AIR QUALITY PROGRAM
www.mass.gov/dos



Street and Highway Work Zone Safety Alert for Public Works Employers and Employees in Massachusetts



Fatalities in Work Zones in Massachusetts

Seven workers have died between 2000 - 2006 while working in or around street and highway work zones in Massachusetts. Other workers have been seriously injured. Many of those injured or killed have been public sector workers.

- A town worker backfilling a street excavation used to repair a gas pipe died when struck by a car.
- A police officer performing a highway construction traffic detail died when crushed beneath a backing dump truck loaded with asphalt.
- A construction laborer working to repair a street manhole died when crushed between a backhoe and a dump truck.
- A police officer performing a roadway construction traffic detail died when struck by a car that intruded into the roadway work zone.
- Another police officer performing a roadway construction traffic detail died when crushed beneath a backing dump truck loaded with asphalt. (very similar to the other incident)

Fatalities and injuries CAN be prevented if proper work zone setup procedures are followed, proper safety equipment is used, and workers and employers are adequately trained.

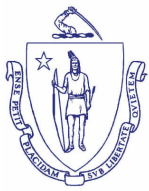
What are the hazards?

Workers in street and highway work zones are exposed to risk of injury from the movement of construction vehicles and equipment within the work zones, as well as from passing motor vehicle traffic. Data from the Census of Fatal Occupational Injuries (CFOI) indicate that of the 841 work-related fatalities in the U.S. highway construction industry between 1992 and 1998, 465 (55%) were vehicle- or equipment-related incidents that occurred in a work zone. According to the Federal Highway Administration, work zone fatalities have increased approximately 50% since 1998.

While this bulletin primarily focuses on “struck-by” hazards, there are many other hazards/concerns in work zones including, but not limited to open trenches, falls, working near electrical lines, noise, and temperature extremes.

How are workers exposed or put at risk?

Highway workers routinely work in proximity to construction vehicles and motor vehicle traffic. Flaggers, police officers, and other workers on foot are exposed to the risk of being struck by traffic vehicles or construction equipment if they are not visible to motorists or equipment operators. Workers who operate construction vehicles or equipment risk injury due to overturn, collision, or being caught in running equipment. Highway workers, regardless of their assigned task, work in conditions of low lighting, low visibility, and inclement weather, and may work in congested areas with exposure to high traffic volume and speeds.



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Who monitors the health and safety for public employees in Massachusetts?

While private sector employees are covered by Federal OSHA, public sector employees in Massachusetts are not. The Massachusetts Division of Occupational Safety (DOS), in accordance with Chapter 149 section 6, is charged with inspecting public sector workplaces in Massachusetts and determining what procedures and practices are required to protect workers. As a matter of policy, DOS references OSHA Standards as well as other consensus standards in determining whether proper procedures are being followed to protect workers. Since there are no *specific* OSHA standards for work zone safety, DOS recommends that all public sector agencies follow Federal Highway Administrations *Manual on Uniform Traffic Control Devices* (MUTCD) as well as the ANSI Standard on High Visibility Clothing (ANSI/ISEA 107-2004). There are some requirements that may be applicable to work zones in the OSHA Construction Standards under 29 CFR 1926, Subpart O as well. Information on obtaining these standards is given at the end of this document.

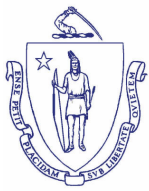
What can I do to protect myself and my workers in work zones?

The Federal Highway Administration has developed and maintained the *Manual on Uniform Traffic Control Devices* (MUTCD), which provides for uniform design and setup of highway work zones. The primary focus of Part 6 of the MUTCD is the interaction between the road user and the work zone. The MUTCD contains exhaustive specifications for signage, pavement and curb markings, traffic signals, and marking of school zones, bicycle facilities, and highway-rail crossings. It also prescribes temporary traffic control measures for numerous scenarios involving lane closures, lane shifts, detours, shoulder work, median crossovers, mobile operations, and blasting. The MUTCD addresses topics such as training, personal protective equipment, speed reduction, barriers, and lighting, as they apply to highway construction.

OSHA construction industry regulations (29 CFR 1926, Subpart O) address operation of vehicles and equipment within an off-highway job site not open to public traffic. Subpart O is not exhaustive in its coverage of machinery types or safety equipment, nor does it address work practices, traffic control plans, or shift work. Flagging and signaling practices are discussed in general terms in Subpart G, which covers signs, signals, and barricades. Subpart G defers to the MUTCD on matters relating to hand signals, barricades, and traffic control devices.

Key measures required to protect workers in work zones include:

- ✓ Proper layout of work zones
- ✓ Proper use of temporary traffic control devices, such as signage and cones
- ✓ Motorist information and speed enforcement
- ✓ Flagger/ police training for those responsible for safe movement of traffic through work zones
- ✓ Use of high visibility clothing in accordance with ANSI Standard (ANSI/ISEA 107-2004)
- ✓ Illumination of work zones
- ✓ Development and implementation of Internal Traffic Control Plans to coordinate flow of construction vehicles, equipment and workers on foot within the work zone
- ✓ Separation of workers on foot from heavy equipment to extent possible
- ✓ Proper equipment maintenance and operation
- ✓ Providing training
- ✓ Insuring accountability



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Useful Links to Get More Information

Manual on Uniform Traffic Control Devices developed by the US Department of Transportation, Federal Highway Administration. The MUTCD defines the standards used by road managers nationwide to install and maintain traffic control devices on all streets and highways.

- <http://mutcd.fhwa.dot.gov/>

Work Zone Mobility and Safety Program- Work Zone Best Practices Guidebook

The American Road and Transportation Builders Association joined forces with the Federal Highway Administration to improve safety in highway work zones by creating this clearinghouse. Includes information in Spanish.

- <http://wzsafety.tamu.edu/>

Work Zone Mobility and Safety Program- Work Zone Best Practices Guidebook by US Department of Transportation, Federal Highway Administration: this and other information available for download at:

- <http://www.ops.fhwa.dot.gov/wz/index.asp>

Highway Construction Work Zones and Traffic Control Hazards is an **on-line tutorial** developed by Wayne State University, College of Engineering through a Susan Harwood Grant given by Federal OSHA. This link can be accessed at:

- <http://webpages.eng.wayne.edu/osha>

Building Safer Highway Work Zones: Measures to Prevent Worker Injuries from Vehicles and Equipment Available from NIOSH by calling 1-800-35-NIOSH (publication number 2001-128) or download at

- <http://www.cdc.gov/niosh/2001128.html>

Massachusetts Police Officers Killed in Highway and Street Work Zones **report describes fatalities in workzones and measures needed to prevent future incidents.**

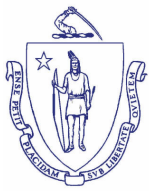
- http://www.mass.gov/Eeohhs2/docs/dph/occupational_health/workzone.pdf

American National Standard for High-Visibility Safety Apparel and Headwear ANSI/ISEA 107-2004. Available for purchase through the following:

- <http://www.safetyequipment.org> or <http://www.ansi.org/>

Occupational Safety and Health Administration (OSHA). General information on worker health and safety including OSHA standards.

- <http://www.osha.gov>



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Materials Available in Print or CD

Please send me the following information:
Mail to: Nancy Comeau, MA Division of Occupational Safety,
1001 Watertown St., West Newton, MA 02465
Or Fax Request to Nancy Comeau at 617-727-4581
Or Email Request to nancy.comeau@state.ma.us

<u>Preventing Deaths and Injuries to Public Workers while Working around Mobile Equipment:</u> The New York guide provides safety training to employers who work around mobile equipment.	<input type="checkbox"/> CD	<input type="checkbox"/> Hard Copy
<u>Manual on Uniform Traffic Control Devices MUTCD</u> or Download from http://mutcd.fhwa.dot.gov/	<input type="checkbox"/> CD	No Hard Copy
<u>Federal Highway Administration</u> Powerpoint Presentation on MUTCD	<input type="checkbox"/> CD	No Hard Copy
<u>Massachusetts Police Officers Killed in Highway and Street Work Zones</u> report describes fatalities in workzones and measures needed to prevent future incidents or Download from http://www.mass.gov/Eeohhs2/docs/dph/occupational_health/workzone.pdf	No CD	<input type="checkbox"/> Hard Copy

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